

Darmstadt, 17 October 2018

## **Telespazio VEGA Deutschland embarks on Mission to Mercury**

BepiColombo is Europe's first mission to Mercury. The joint ESA/JAXA mission is planned to launch on 20 October 2018 to start its seven-year journey to the planet that is closest to our Sun. By the time of the launch, the Telespazio VEGA Deutschland team will have contributed nearly seven years into the development of key ground systems and operations preparations for the mission.

The engineers in Telespazio VEGA Deutschland take particular pride in having developed the Operational Simulator for the mission, which the Flight Control Team (FCT) at the European Space Operations Centre (ESOC) in Darmstadt has been – and will continue – using to prepare for the different phases and manoeuvres of the mission. Throughout the past few months, the FCT has been training those manoeuvres as well as contingencies in dedicated full-day sessions under the leadership of an ESA Flight Director, and operated by an experienced Simulation Officer from Telespazio VEGA Deutschland.

The company has also developed the Mission Planning System (MPS) for BepiColombo, re-using technology and leveraging on experience gathered in previous interplanetary missions like Rosetta. The MPS will be used to schedule and optimise the scientific and operational tasks that the spacecraft will carry out throughout its lifetime.

Telespazio VEGA Deutschland is also supporting ESOC in operating BepiColombo, ranging from real-time operations of the spacecraft and Ground Station Operations. The company's operations experts have been involved in launch preparations and they will be part of the launch, the commissioning phase and future routine operations on BepiColombo's way to and around Mercury. The journey will be quite challenging, as the spacecraft will perform several flybys around Earth, Venus and Mercury before arriving at its destination. Determining the orbit and attitude of the spacecraft to stay on the correct trajectory is another exciting activity that flight dynamics experts from Telespazio VEGA Deutschland are providing to ESOC.

For the European part of the BepiColombo mission, Telespazio VEGA Deutschland acts as service provider for the end-to-end development and deployment of the dedicated ICT Infrastructure for the client ESOC. This is a particular honour for the company, since it includes the coordination of other teams' activities as well as third party requirements. Many years of expert service in ICT Engineering have provided a trusting and solid ground for ESOC to award this new area of responsibility to Telespazio VEGA Deutschland.

Telespazio, being a joint venture between Leonardo (67%) and Thales (33%) is also proud to count itself as among other Leonardo divisions contributing to BepiColombo.

Leonardo is the industrial Prime Contractor for the SIMBIO-SYS instrument (Spectrometers and Imagers for MPO BepiColombo Integrated Observatory SYSTEM). SIMBIO-SYS is composed of

three channels: a high-resolution camera for a detailed study of Mercury's geology, a stereo camera for a 3D reconstruction of the entire surface and a hyperspectral room dedicated to the study of the surface composition.

On its remarkable journey, BepiColombo will be guided through space by its Autonomous Star-Tracker attitude sensor, designed and manufactured by Leonardo in Italy, which measures the orientation of the satellite at every moment, providing the on-board computer with the information required for staying on the predefined route.

Also Thales Alenia Space, a joint venture between Thales (67%) and Leonardo (33%) is part of the Core Team of the BepiColombo mission. Thales Alenia Space coordinates an industrial group of 35 European companies within its work package. In particular, it is responsible for the telecommunication, thermal control, electric power distribution systems, for the integration and tests of the complete satellite as well as the support for the launch campaign. The company also supplied the Deep Space Transponder (DST) in X- and Ka-band, the radiofrequency distribution assembly, the on-board computer, the mass memory and the high-gain antenna, as well as for the mission's radio science experiment.

### **About BepiColombo**

The joint ESA/JAXA mission is one the most ambitious among those scheduled by ESA. It aims at a detailed study of the planet Mercury and the environment that surrounds it, through the use of two separate probes that will operate independently once into Mercury's orbit. In particular, a probe will carry instruments to study the surface and internal composition of the planet; the other spacecraft will transport tools for the study of Mercury's magnetosphere.

BepiColombo is scheduled to launch on 20 October at 03:45 am CEST on-board an Ariane 5 from Europe's Spaceport in Kourou, French Guyana.

### **Press contact**

Alexandra Sokolowski  
alexandra.sokolowski@telespazio-vega.de  
Tel: +49 (0) 6151 8257-764  
Mobile: +49 (0)162 21 48 175